

**PATENT**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Fink et al.

Serial No: 10/583216

Filed: June 16, 2006

Confirmation No: 7714

Examiner: Marina Fishman

Group Art Unit: 2833

Title: Medium-Voltage  
Switchgear Assembly

Docket No: 03-H36

**APPEAL BRIEF**

Mail Stop Appeal Brief-Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

Dear Sir:

In response to a Final Office Action dated February 7, 2011, Applicant submits the following Appeal Brief. A Notice of Appeal was filed on June 23, 2011 and, thus, the date for filing the Appeal Brief is August 23, 2011. The Applicant responds as follows:

I hereby certify that this correspondence is being transmitted via the Office electronic filing system in accordance with 37 CFR §1.6(a)(4) on the date indicated below.

/Michael M. Rickin/

Signature of Person Making Transmission

August 22, 2011	Michael M. Rickin	26,984
Date	Name	Reg. No.

## **APPEAL BRIEF**

### **I. Real Party In Interest**

The real party in interest is ABB Technology AG.

### **II. Related Appeals and Interferences**

None.

### **III. Status of Claims**

Claims 8-11 are currently pending in this application. Claims 8-11 have been finally rejected and form the basis for this appeal. The Claims Appendix (Section VIII) includes a clean copy of the appealed claims 8-11.

In summary, the current status of the claims are as follows:

Claims 1-7 have been canceled; and

Claims 8-11 have been finally rejected and are being appealed.

### **IV. Status of Amendments**

No amendment has been filed subsequent to the final rejection.

### **V. Summary of Claimed Subject Matter**

In the summary below, the references to page, paragraph and line numbers and drawing figures are with regard to the specification of the subject application, as filed.

Independent claim 8 is directed to a medium-voltage (MV) switchgear assembly embodiments for which are shown in Figs 1-3. In accordance with the invention, the MV switchgear assembly has an enclosure (1) that forms a vacuum switching chamber and is filled with an insulating gas (**see page 2, lines 31 et seq.**). The MV switchgear assembly also has a bushing such that an interior portion of the bushing is disposed inside the enclosure with the

insulating gas an exterior portion of the bushing is disposed outside the enclosure **(see Fig. 2 and page 6, lines 4-11)**.

The bushing has a vacuum switching chamber (1) **(see Fig. 2)** that is a three position vacuum chamber switch **(see page 2, lines 26-29)**. A three position vacuum chamber switch has a connected position, a disconnected position and a grounding position **(see page 1, lines 12-15)**. Because of the grounding position, the switching chamber (1) must be connected to a ground point.

The bushing also has a conductive edge board (5) that is connected to and extends radially outward from the switching chamber **(see Fig. 2 and page 6, lines 4-11)**. The edge board (5) is connected to a wall (2) of the enclosure **(see Figs. 1 and 2 and page 6, lines 4-11)** and has a seal (6) that engages an outer surface of the wall (2) of the enclosure and forms a gas tight seal with the wall **(see Figs. 1 and 2 and page 6, lines 4 to 11)**. The connection of the edge board (5) to the wall (2) forms a ground point for the switching chamber as the wall (2) is metallic **(see Figs. 1 and 2 and page 6, lines 4 to 11)**.

#### **VI. Grounds of Rejection to be Reviewed on Appeal**

The grounds of rejection to be reviewed on appeal are whether claims 8-11 are unpatenable under 35 U.S.C. §103(a) as being obvious over U.S. Patent No. 3,812,314 to Nonken (the "Nonken Patent") in view of U.S. Patent No. 6,720,515 to Renz et al. (the "Renz et al. Patent").

#### **VII. Argument**

Claims 8-11 are not obvious under U.S.C. §103(a) as being obvious over the Nonken Patent in view of the Renz et al. Patent

Applicant submits that the Examiner has filed to establish a prima facie case of obviousness in rejecting independent claim 8 and dependent claims 9-11 over the Nonken Patent in view of the Renz et al. Patent because the Examiner has not provided with rational underpinning to support a legal conclusion of obviousness, as required by MPEP 2143 and the Federal Circuit. See *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006). See also *KSR*, 550 U.S. at \_\_\_\_, 82 USPQ2d at 1396 (quoting Federal Circuit statement with approval).

The Nonken Patent discloses a molded plastic bushing for high electrical power applications. The primary object of the invention is said to be the combination of a vacuum switching device with a rugged plastic bushing for underground electric power distribution systems (column 1, lines 59 to 63).

Fig. 1 shows a bushing 1 that has an elongated molded housing 1a made of electrically insulated epoxy resin (column 2, lines 65 to 68). An annular steel flange 2 is secured to the housing 1a. The outer peripheral edge 2b of flange 2 is adapted to be welded to a steel supporting frame such as the portion of frame 3-3' (column 3, lines 16 to 27). The bushing 1 is adapted to be mounted in an underground power transformer or similar device (column 2, lines 25 to 27).

There is a vacuum switch 4 in housing 1a. As shown in Fig. 1, the vacuum switch 4 is not a three position switch as it does not have a grounding position. Therefore vacuum switch 4 does not need and does not have a grounding contact.

As shown in Figs. 1 and 2, the switch 4 has a generally cylindrically shaped hollow ceramic wall member

5. Metal end caps 6 and 7 are sealed to opposite ends of wall member 5 to define a vacuum chamber 4a (column 3, lines 36 to 50).

The bushing also has a first electrically conductive contact 8 that is in a fixed relationship to end cap 6 and a second contact 9 that is mounted on an electrically conductive rod member 10. Member 10 is mechanically operable to for relative movement with respect to end cap 7 (column 3, lines 61 to 65).

There is nothing in the Nonken Patent that shows or describes a gas anywhere in bushing 1 of Fig. 1.

Fig. 3 of the Nonken Patent shows a multi-terminal bushing 1' that has a pair of encapsulated vacuum switches 4' and 4'' (column 7, lines 25 to 28). Fig. 3 does not show the reference numeral 1' but does show the reference numeral 1 which presumably is meant to be 1'. The bushing 1' has a molded epoxy resin housing 1a' which is said to be similar to the molded epoxy resin housing 1a of Fig. 1 (column 7, 34-36).

As seen by a comparison of Figs. 1 and 3, the switches 4' and 4'' are identical to switch 4 of Fig. 1. Therefore the switches 4' and 4'' are not three position switches and thus do not need and do not have a grounding contact.

A gas operated switch 15 which functions as a quick-make and quick-break switch is connected to each of vacuum switches 4' and 4'' (column 7, lines 28-33).

A steel flange 2' is partially molded into housing 1a' and extends the perimeter of the housing so that the outer edge 2b' of flange 2' can be welded to steel tank 16 to position one end of the housing 1a in the tank. This forms a gas-tight seal around the housing 1a.

An electrical insulating gas is in the steel tank 16 around the closed end of housing 1a'. The gas insulates the mechanical operating mechanisms 17 and 17a which are coupled, respectively, to operating rods 10' and 10'' (column 7, lines 42 to 53). Mechanism 17 moves rod member 10' to open and close contact pairs 8'-9' and mechanism 17a moves rod member 10'' to open and close contact pairs 8''-9'' (column 8, lines 10-13).

As shown in Fig. 3, flange 2' and its outer edge 2b' are not in contact with vacuum switches 4' and 4''. There is nothing in the Nonken Patent that says or even suggests that rod members 10' and 10'' when moved, as described above, make any contact with steel tank 16.

In rejecting claims 8-11, the Examiner states that the Nonken Patent "discloses the instant claimed invention except for a conductive edge board" that is connected to and extends radially outward from the switching chamber with the edge board connected to a wall of the insulating gas filled enclosure and having a seal that engages an outer surface of the wall of the insulating gas filled enclosure to form a gas tight seal therewith so that the connection of the edge board to the wall *forms a grounding point for the switching chamber*, but finds this to be an obvious modification.

The Examiner identifies the enclosure of the Nonken Patent that is filled with an insulating gas as either 3 of Fig. 1 or 1a' and 16 of Fig. 3. The Examiner references column 7, lines 45-51 of the Nonken Patent as describing the gas filled enclosure which is the insulating gas filled steel tank 16 to which the molded epoxy resin housing 1a' is attached as shown in Fig. 3.

The Nonken Patent does not show or describe an insulating gas filled enclosure for the embodiment of Fig. 1. An insulating gas is only described in connection with the embodiment of Fig. 3.

If the reference numeral 1' for the bushing of Fig. 3 of the Nonken Patent refers to that which is shown in its entirety in Fig. 3, then the gas filled steel tank 16 is inside the bushing and this arrangement does not meet the recitation in claim 8 that the insulating gas filled enclosure and the bushing are separate elements and the bushing has to extend through the enclosure which, as shown in Fig. 3, it does not do. If it did, then that would compromise the integrity of steel tank 16.

If the reference numeral 1' for the bushing in Fig. 3 of the Nonken Patent refers only to the molded epoxy resin housing 1a', then the bushing 1' does not extend through the steel tank 16.

The Examiner says that the Renz et al. Patent discloses switchgear with a three position switch and a conductive edge board 15 of Fig. 1 that is connected to a wall to form a ground point. The Examiner concludes it would have been obvious to one of ordinary skill in the art at the time the invention of claim 8 was made to provide the conductive edge to form a ground point in the embodiments described in the Nonken Patent as suggested by the Renz et al. Patent.

The vacuum switches 4' and 4'' shown in Fig. 3 of the Nonken Patent are in a molded epoxy resin housing 1a'. Substituting the switchgear of the Renz et al. Patent for the vacuum switches 4' and 4'' would require a complete redesign of the housing 1a' so that the conductive edge board 15 is available outside of the housing 1a'. Even if

that redesign were done and there is nothing in either of the Nonken Patent or the Renz et al. Patent that teaches or suggests that, the bushing would still not extend through the steel tank 16.

If the vacuum switch 4 in Fig. 1 of the Nonken Patent were replaced by the switchgear of the Renz et al. Patent, then the bushing 1 of Fig. 1 would have to be modified so that conductive edge board 15 is available outside of the bushing 1. Even if that were done there is still no gas filled enclosure in the modified bushing of Fig. 1. The only gas filled enclosure shown and described in the Nonken Patent and the Renz et al. Patent is the steel tank 16 shown in Fig. 3 of the Nonken Patent. Adding that tank to the embodiment shown in Fig. 1 of the Nonken Patent would change the embodiment of Fig. 1 which the Nonken Patent claims to be separate and distinct from the embodiment shown in Fig. 3. Also the bushing 1 would not extend through the steel tank.

#### Conclusion

Favorable consideration of this appeal and reversal of the rejection of claims 8-11 is respectfully requested.

Respectfully submitted,

ABB Technology AG

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August 22, 2011

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## **VIII. Claims Appendix**

### Copy of Claims on Appeal

8. A medium-voltage switchgear assembly comprising:  
an enclosure filled with an insulating gas; and  
a bushing extending through the enclosure such that an interior portion of the bushing is disposed inside the enclosure with the insulating gas and an exterior portion of the bushing is disposed outside the enclosure, the bushing comprising a vacuum switching chamber and a conductive edge board connected to and extending radially outward from the switching chamber, the edge board being connected to a wall of the enclosure and having a seal that engages an outer surface of the wall to form a gas tight seal therewith, the connection of the edge board to the wall forming a ground point for the switching chamber.

9. The medium-voltage switchgear assembly of claim 8, wherein the bushing has a cast-resin body that encapsulates the switching chamber.

10. The medium-voltage switchgear assembly of claim 9, wherein the switching chamber comprises a three-position switch enclosed in a vacuum insulated housing having a metal center portion disposed between ceramic end portions, the center portion being connected to the edge board.

11. The medium-voltage switchgear assembly of claim 10, wherein the switch comprises a moving contact and a fixed contact, the fixed contact being disposed in the interior portion of the bushing.

IX. Evidence Appendix

-None-

X. Related Proceedings Appendix

-None-